Prevention of Significant Air Quality Deterioration Review

Final Determination

August 7, 2019

Facility Name: West Fraser – Dudley Lumber Mill
City: Dudley
County: Laurens
AIRS Number: 04-13-175-00035
Application Number: TV-343417
Date Application Received: March 15, 2019

State of Georgia
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BACKGROUND

On March 11, 2019, West Fraser – Dudley Lumber Mill (hereafter "facility") submitted an application for an air quality permit to construct and operate a new lumber mill to replace the existing mill. The facility is located at 3770 US Highway 80 West in Dudley, Laurens County. The new lumber mill will include one sawmill process group (ID No. FUG-SM), one planer mill (ID No. PM), two indirectly fired continuous drying kilns (ID Nos. CDK-1 and CDK-2), one thermal oil heater system (ID No. TOHS), and one fire pump engine (ID No. FE). CDK-1 and CDK-2 will be indirectly heated by thermal oil (in tubes) supplied by the wood-fired Boiler TOHS, rated at 137.8 MMBtu/hr. The facility proposed to cap the combined annual throughput for two kilns at 300 million board feet (MMbf).

On June 13, 2019, the Division issued a Preliminary Determination stating that the modifications described in Application No. TV-343417 should be approved. The Preliminary Determination contained a draft Air Quality Permit for the construction and operation of the modified equipment.

The Division requested that West Fraser – Dudley Lumber Mill place a public notice in a newspaper of general circulation in the area of the existing facility notifying the public of the proposed construction and providing the opportunity for written public comment. Such public notice was placed in *The Courier Herald* (legal organ for Laurens County) on June 27, 2019. The public comment period expired on July 29, 2019.

During the comment period, there were no comments received from the U.S. EPA, the facility, or the general public. There was just one email with questions from U.S. EPA Region IV that prompted some additional review of the design of the new lumber drying kilns (ID Nos. CDK-1 and CDK-2).

U.S. EPA REGION 4 QUESTION

U.S. EPA Region IV sent an email to the Division on July 24, 2019, in which there were questions that prompted the Division to revisit the permitting determination. U.S. EPA Region IV questioned why the Division would not require a stack test since each of the new lumber drying kilns (ID Nos. CDK-1 and CDK-2) would have only one stack, located at the center of each kiln. Such test may provide information of the kiln volatile organic compounds (VOC) emission rates.

CDK-1 and CDK-2 are the first hot oil heated lumber drying kilns in Georgia. If there is no steam, hot exhaust gas, air going in the center of the kiln, and without a strong center blower, the kiln would be operated under negative pressure, all kiln emissions would exit through the power vent at the center of the kiln, and a stack test at the power vent would provide a meaningful VOC emission rate from the entire kiln. The Division agreed with EPA's question and contacted the facility for more information of the design and operating principle of the new kilns.

According to a conference phone call on August 6, 2019, and an email from Mr. Forrest Denney on August 7, 2019, below is a detailed description of the new kilns:

- The kiln heats up and dries the lumber by sending heated oil through a set of piping in the center of the kiln.
- There is no combustion exhaust or hot steam being sent into the center of the kiln; instead, there will be fans sending air into the center of the kiln. Air flow will emanate from the center of the kiln toward both ends.
- There will be ductwork at the top of the kiln structure. The ducts will pick up the emissions from both ends of the center section (a.k.a. heating chamber) and send them back to the center of the ceiling area and into the atmosphere through the power vent.
- The ductwork on top of the heating chamber will act like a heat exchanger for incoming air stream and a heat blanket for the heating chamber.
- There will be a "box" (dead space) at each end of the kiln to allow pressure generated by the kiln fans to be relieved; therefore, the "boxes" would reduce air flow rate toward both ends, and keeping emissions better contained in the kiln (more emissions will be collected by the ducts and sent through the power vents). These boxes are also needed to relieve pressure on the kiln structure, and therefore extend the asset life.
- With the above design, the facility will still achieve that 80% of the emissions being ducted through the power vent.

According to the above, the Division has determined that the new kilns will not be operated under negative pressure. Rather, it is operated under positive pressure; it even requires a "box" at each end of the kiln to relieve the positive pressure. Thus, there will still be emissions going into the atmosphere through the doors and/or any other openings.

Testing of the new lumber kilns will remain very difficult. With huge openings (usually 20 feet by 20 feet) on both ends, capturing all kiln exhaust gases is extremely difficult. lumber is on a train tracks extending beyond the openings, so the kiln cannot be physically closed.

With the above findings, the Division has concluded that the way emissions exit a hot oil heated kiln is not different to the way emissions exit any direct heated or steam heated kiln. Since capturing all exhaust gases from a kiln is extremely difficult, the Division has determined that the final permit would not require the facility to conduct any performance testing on the new kilns (ID Nos. CDK-1 and CDK-2). The draft permit amendment will be issued as the final permit amendment.